French Editorial Commentary from the ACHBPT

Postoperative pancreatic fistula after distal pancreatectomy: pancreatic thickness and duct size as the only denominators?

Antoine Notte, Alexandre Doussot^

Department of Digestive Surgical Oncology, Liver Transplantation Unit, Chu Besancon, France

Correspondence to: Alexandre Doussot. Department of Digestive Surgical Oncology, Liver Transplantation Unit, Chu Besancon, France.
Email: lex.doussot@yahoo.com.

Comment on: De Pastena M, van Bodegraven EA, Mungroop TH, *et al.* Distal Pancreatectomy Fistula Risk Score (D-FRS): Development and International Validation. Ann Surg 2022. [Epub ahead of print]. doi: 10.1097/SLA.0000000000005497.

Submitted Jan 31, 2023. Accepted for publication Feb 26, 2023. Published online Mar 15, 2023.
doi: 10.21037/hbsn-23-47
View this article at: https://dx.doi.org/10.21037/hbsn-23-47

We read with great interest the multicenter study from De Pastena and colleagues dealing with the prediction of clinically relevant postoperative pancreatic fistula (CR-POPF) after distal pancreatectomy (DP) (1). The study aimed to develop two scores. One was solely based on preoperative data. The second one relied on both preoperative and intraoperative data. The entire cohort (n=1,336) included 339 patients in a development cohort and 997 patients represented the validation cohort. Interestingly, an internal-external validation technique was used. The preoperative distal pancreatectomy-fistula risk score (D-FRS) encompassed two variables, pancreas thickness and common pancreatic duct size, both measured on preoperative imaging at the pancreas neck. Predictive performances of this score were compelling in terms of calibration using the internal-external validation approach (AUC =0.73). This score also allowed good stratification of patients in 3 groups at distinct estimated risks of CR-POPF (<10%, 10–25% and >25%).

Regarding the second D-FRS including pancreas thickness and common pancreatic duct size on imaging along with body mass index, soft pancreas texture and operative time, performed well with a high internal calibration (AUC =0.85) but no external validation could be carried out due to missing data in the validation cohort.

The authors should be commended for this study bringing the first validated risk score for CR-POPF after DP, the so-called D-FRS. Recently, another similar score has been published but without external validation (2). Such a clinical risk score is of paramount importance for preoperative risk assessment and patient information. Moreover, it helps in building perioperative mitigation strategies for early detection and treatment of CR-POPF. These strategies include developing preoperative preventive tools, taking intraoperative decisions (i.e., use of intraoperative drains and vascular coverage techniques) and following postoperative standardized monitoring pathways (3-7). Finally, this score could be used for patient risk stratification for future randomized controlled trials.

The clinical relevance of pancreas thickness in risk assessment of POPF after DP should be underlined. While intuitively meaningful, this was rarely reported in previous published studies (2,8,9). Such a point raises questions regarding the appropriate definition of a thick pancreas and which transection technique should be preferred (10).

On a methodological standpoint, the internal-external validation technique used should be highlighted as a gold standard approach and should be preferred to a pure external validation (11,12). Unfortunately, owing to missing data, the second score based on preoperative and intraoperative variables could not be validated and performances between the two scores could not be compared.

Finally, one potential limitation warrants discussion. According to the ISGPS definition, POPF is retrospectively graded based on the magnitude of required postoperative

^ ORCID: 0000-0003-0543-1793.

reinterventions and observed outcomes (13). Although it has been well established that both mitigation strategies and standardized postoperative monitoring directly reduce the risk and the severity of CR-POPF, these parameters are classically not considered in preoperative predictive scores. Nevertheless, validation of the preoperative score reported by the authors may provide compelling data for its applicability in clinical practice (https://dpcg.nl/pancreascalculator/).

In conclusion, preoperative risk assessment using the D-FRS appears reliable and must be paired with mitigation strategies and standardized monitoring in the prevention of CR-POPF after DP.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Hepatobiliary Surgery and Nutrition*. The article did not undergo external peer review.

Conflicts of Interest: Both authors have completed the ICMJE uniform disclosure form (available at https://hbsn.amegroups.com/article/view/10.21037/hbsn-23-47/coif). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

References

1. De Pastena M, van Bodegraven EA, Mungroop TH, et al. Distal Pancreatectomy Fistula Risk Score (D-FRS): Development and International Validation. Ann Surg 2022. [Epub ahead of print]. doi: 10.1097/SLA.0000000000005497.
2. Bonsdorff A, Ghorbani P, Helanterä I, et al. Development and external validation of DISPAIR fistula risk score for clinically relevant postoperative pancreatic fistula risk after distal pancreatectomy. Br J Surg 2022;109:1131-9.
3. Hackert T, Klaiber U, Hinz U, et al. Sphincter of Oddi botulinum toxin injection to prevent pancreatic fistula after distal pancreatectomy. Surgery 2017;161:1444-50.
4. Vissers FL, Balduzzi A, van Bodegraven EA, et al. Prophylactic abdominal drainage or no drainage after distal pancreatectomy (PANDORINA): a binational multicenter randomized controlled trial. Trials 2022;23:809.
5. Hassenpflug M, Hinz U, Strobel O, et al. Teres Ligament Patch Reduces Relevant Morbidity After Distal Pancreatectomy (the DISCOVER Randomized Controlled Trial). Ann Surg 2016;264:723-30.
6. Antila A, Siiki A, Sand J, et al. Perioperative hydrocortisone treatment reduces postoperative pancreatic fistula rate after open distal pancreatectomy. A randomized placebo-controlled trial. Pancreatology 2019;19:786-92.
7. Smits FJ, Henry AC, Besselink MG, et al. Algorithm-based care versus usual care for the early recognition and management of complications after pancreatic resection in the Netherlands: an open-label, nationwide, stepped-wedge cluster-randomised trial. Lancet 2022;399:1867-75.
8. Jutric Z, Johnston WC, Grendar J, et al. Preoperative computed tomography scan to predict pancreatic fistula after distal pancreatectomy using gland and tumor characteristics. Am J Surg 2016;211:871-6.
9. Mendoza AS 3rd, Han HS, Ahn S, et al. Predictive factors associated with postoperative pancreatic fistula after laparoscopic distal pancreatectomy: a 10-year single-institution experience. Surg Endosc 2016;30:649-56.
10. Merdrignac A, Garnier J, Dokmak S, et al. Effect of the Use of Reinforced Stapling on the Occurrence of Pancreatic Fistula After Distal Pancreatectomy: Results of the REPLAY (REinforcement of the Pancreas in distaL pAncreatectomY) Multicenter Randomized Clinical Trial. Ann Surg 2022;276:769-75.
11. Steyerberg EW, Harrell FE Jr. Prediction models need appropriate internal, internal-external, and external validation. J Clin Epidemiol 2016;69:245-7.
12. Collins GS, Reitsma JB, Altman DG, et al. Transparent reporting of a multivariable prediction model for Individual Prognosis or Diagnosis (TRIPOD): the

TRIPOD statement. J Clin Epidemiol 2015;68:134-43.
13. Bassi C, Marchegiani G, Dervenis C, et al. The 2016 update of the International Study Group (ISGPS) definition and grading of postoperative pancreatic fistula: 11 Years After. Surgery 2017;161:584-91.

Cite this article as: Notte A, Doussot A. Postoperative pancreatic fistula after distal pancreatectomy: pancreatic thickness and duct size as the only denominators? HepatoBiliary Surg Nutr 2023;12(2):229-231. doi: 10.21037/hbsn-23-47